THE INVENTION CLAIMED IS:

1. A method for manufacturing a fiber optical engine comprising:

providing an optical element having an optical substrate and optics;

providing an opto-electronic element for converting between light and electronic signals;

providing an integrated circuit for controlling the opto-electronic element;

passively aligning the opto-electronic element with the optics;

securing the opto-electronic element to the optical substrate;

securing the integrated circuit to the optical substrate;

providing an electrical substrate; and

securing the electrical substrate and the optical element.

2. The method as claimed in claim 1 including:

passively aligning the integrated circuit with the optics.

3. The method as claimed in claim 1 wherein:

providing the optical element includes providing the optical substrate with mirrors in alignment with the optics; and

providing the integrated circuit includes providing photosensitive devices therein for providing feedback for controlling the opto-electronic element.

4. The method as claimed in claim 1 wherein:

providing the optical element includes forming conductive traces and bumps on the electrical substrate for connecting the opto-electronic element and the integrated circuit to the optical element in passive alignment.

5. The method as claimed in claim 1 wherein:

providing the opto-electronic element includes forming wire bumps thereon;

providing the integrated circuit includes forming bumps thereon; and

providing the optical element includes forming conductive traces on the optical substrate for connecting the opto-electronic element and the integrated circuit to the optical element in passive alignment.

6. The method as claimed in claim 1 wherein:

securing the opto-electronic element and the integrated circuit to the optical element includes:

depositing an anisotropically conductive ultra-violet or heat curable adhesive on the optical substrate;

positioning the opto-electronic element and the integrated circuit to the optical element for assembly; and

curing the anisotropically conductive ultra-violet or heat curable adhesive.

7. The method as claimed in claim 1 wherein:

providing the electrical substrate includes providing the electrical substrate longer than the optical element and forming conductive traces thereon extending beyond the optical element when the optical element is secured to the electrical element; and

securing the electrical substrate and the optical element includes:

depositing an ultra-violet or heat curable adhesive on the optical substrate;

positioning the opto-electronic element and the integrated circuit to the optical element for assembly; and

curing the ultra-violet or heat curable adhesive.

8. The method as claimed in claim 1 including:

providing a thermal substrate in contact with the opto-electronic element and the integrated circuit.

9. The method as claimed in claim 1 including:

providing a circuit substrate in contact with the opto-electronic element and the integrated circuit and having associated therewith elements selected from a group consisting of conductive traces, filters, charge pumps, voltage regulators, mirrors, prisms, micro mechanical elements, active elements, passive elements, and a combination thereof.

10. The method as claimed in claim 1 wherein:

providing the optical element provides the optical substrate as a wafer; and

securing the opto-electronic element and the integrated circuit includes securing a plurality of opto-electronic elements and a plurality of integrated circuits to the optical substrate as a wafer;

and including;

testing the plurality of opto-electronic elements and the plurality of integrated circuits on the optical substrate as a wafer; and

singulating the optical substrate.

11. A fiber optical engine comprising:

an optical element having an optical substrate and optics;

an opto-electronic element for converting between light and electronic signals, the opto-electronic element secured to the optical substrate and passively aligned with the optics;

an integrated circuit for controlling the opto-electronic element, the integrated circuit secured to the optical substrate; and

an electrical substrate secured to the optical element.

12. The fiber optical engine as claimed in claim 11 wherein:

the integrated circuit is passively aligned with the optics.

13. The fiber optical engine as claimed in claim 11 wherein:

the optical element includes the optical substrate with mirrors in alignment with the optics; and

the integrated circuit includes photosensitive devices therein for providing feedback for controlling the opto-electronic element.

14. The fiber optical engine as claimed in claim 11 wherein:

the optical element includes conductive traces and bumps for connecting the opto-electronic element and the integrated circuit to the optical element in passive alignment.

15. The fiber optical engine as claimed in claim 11 wherein:

the opto-electronic element includes wire bumps thereon;

the integrated circuit includes bumps thereon; and

the optical element includes conductive traces on the optical substrate for connecting the opto-electronic element and the integrated circuit to the optical element in passive alignment.

16. The fiber optical engine as claimed in claim 11 including:

an anisotropically conductive ultra-violet or heat curable adhesive on the optical substrate securing the opto-electronic element and the integrated circuit to the optical element.

17. The fiber optical engine as claimed in claim 11 wherein:

the electrical substrate is longer than the optical element and includes conductive traces thereon extending beyond the optical element with the optical element secured to the electrical element;

and including:

an ultra-violet or heat curable adhesive on the optical substrate securing the opto-electronic element and the integrated circuit to the optical element.

18. The fiber optical engine as claimed in claim 11 including:

a thermal substrate in contact with the opto-electronic element and the integrated circuit.

19. The fiber optical engine as claimed in claim 11 including:

a circuit substrate in contact with the opto-electronic element and the integrated circuit and having associated therewith elements selected from a group consisting of conductive traces, filters, charge pumps, voltage regulators, mirrors, prisms, micro mechanical elements, active elements, passive elements, and a combination thereof.

20. The fiber optical engine as claimed in claim 11 including:

a circuit substrate having transparent conductive traces thereon; and

the circuit substrate includes selecting the circuit substrate from a group of materials consisting of silicon, sapphire, and ceramic.